APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,825	06/19/2007	David Aughton	650005-14	4636

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EXAMINER
DEVITO, ALEX T

ART UNIT	PAPER NUMBER
4176	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/591,825	AUGHTON, DAVID
	Examiner	Art Unit
	ALEX DEVITO	4176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _9/6/06_.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-19_ is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-19_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on _06 September 2006_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a) ☒ All   b) ☐ Some * c) ☐ None of:
       1. ☒ Certified copies of the priority documents have been received.
       2. ☐ Certified copies of the priority documents have been received in Application No. _____.
       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _6/19/07_.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Applicant's communication filed on 9/06/2006. In virtue of this communication, claims 1-19 are currently presented in the instant application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 7-8 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsiung (U.S. Patent No. 4,547,286).

With respect to claim 7 and 11, Hsiung discloses, in figure 1, a system and method including at least first [74] and second [76] flow regulator to allow flow of liquid into and out of said at least one pool respectively, first [74] and second [76] flow sensor co-operating with respective flow regulators and a computational means [78] communicating with said flow regulators and said flow sensors to control operation of said flow regulators, and said computational means determining said containment losses by calculating the measured flow into said at least one pool through said at least first flow regulator and subtracting the measured flow out of said at least one pool through said second regulator (column 7 lines 27-40).

With respect to claim 8 and 12, Hsiung discloses, in figure 1, a particular pool

including at least one liquid metered delivery means [74] which communicate with said

computational means [78] and the measured flow therefrom is also subtracted from the

nett flow into said at least one pool through said first flow regulator (Column 7 lines 27-

40).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 3-6, and 16-17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Mastandrea (U.S. Patent No. 4,852,054) in view of Hsiung (U.S.

Patent No. 4,547,286).

With respect to claims 1, 3, 5-6, and 17, Mastandrea teaches a method of loss

detection to determine containment losses due to leakage from at least one pool

(column 22, lines 34), said method including determining the evaporation losses and

calculating the containment losses by subtracting the evaporation losses (column 22,

lines 49-51) from the volume change (an equivalent of net flow as recited in column 22,

lines 51-53) into said at least one pool. Mastandrea is silent of containment losses due

to seepage and the steps of maintaining a constant level in said at least one pool and

monitoring the net flow into said at least one pool to maintain a constant level, wherein

the said pool includes a first and second flow regulator to allow flow of liquid into and

out of said at least one pool respectively, first and second flow sensor co-operating with

respective flow regulators and a computational means communicating with said flow

regulators and said flow sensors to control operation of said flow regulators, and said

computational means determining said containment losses by calculating the measured

flow into said at least one pool through said at least first flow regulator and subtracting

the measured flow out of said at least one pool through said second regulator, wherein

said pool includes at least one liquid metered delivery means which communicate with

said computational means and the measured flow therefrom is also subtracted from the

nett flow into said at least one pool through said first flow regulator, and wherein said

containment losses are divided into losses from theft and seepage where losses from

seepage are accounted for to allow the theft losses to be determined by said

computational means.

Hsiung discloses maintaining a constant level in said at least one pool, and

monitoring the net flow into said at least one pool to maintain a constant level (column

7, lines 35-38), wherein said at least one pool includes at least a first [74] and second

[76] flow regulator to allow flow of liquid into and out of said at least one pool

respectively, first [74] and second [76] flow sensor co-operating with respective flow

regulators and a computational means [78] communicating with said flow regulators

and said flow sensors to control operation of said flow regulators, and said

computational means determining said containment losses by calculating the measured

flow into said at least one pool through said at least first flow regulator and subtracting

the measured flow out of said at least one pool through said second regulator (column 7

lines 27-40), wherein said at least one pool includes at least one liquid metered delivery

means [74] which communicate with said computational means [76] and the measured

flow therefrom is also subtracted from the net flow into said at least one pool through

said first flow regulator (Column 7 lines 27-40). Hsiung is silent of containment loss due

to seepage.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the corresponding system and the method of loss

detection of Mastandrea by employing the particular pool of Hsiung, in lieu of the pool of

Mastandrea, and performing the steps of maintaining a constant level and monitoring

the net flow into the pool as taught by Hsiung so as to obtain an accurate detection of

losses. Furthermore, to employ the corresponding system and the method of loss

detection of the combination of Mastandrea and Hsiung to determine containment

losses due to seepage would have been deemed obvious to a person skilled in the art

since seepage has been commonly known as another form of loss in the determination

of loss.

With respect to claims 4 and 16, the combination of Mastandrea and Hsiung

obviously disclose all the claimed limitations as expressly recited in claims 1, 3 and 5,

except for the claimed formula.

The applicant, however, states, in page 6, lines 19-29 of the submitted

specification "The evaporation loss 48 can be calculated using standard techniques for

the evaporation of water from a free surface. An example of such a technique being

given by the following formula:

$E_{vp} = 0.01 \times P_f \times E_{pp} \times SA$

Where:

E_{vp} = the volume (Megalitres) lost to evaporation from the pool water surface for a

period 'p'.

P_f = pan factor (Class A)

E_{pp} = pan evaporation for period 'p' (millimeters)

SA = surface area of the pool "

Therefore, to employ the claimed formula in the method of detecting a loss of the

combination of Mastandrea and Hsiung for an accuracy of loss detection would have

been deemed obvious to one of ordinary skill in the art at the time of the invention.

6.   Claims 9-10, 13-14 and 19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hsiung (U.S. Patent No. 4,547,286) in view of Mastandrea (U.S.

Patent No. 4,852,054).

With respect to claims 9, 13, and 18-19, Hsiung discloses all the claimed

limitations, as expressly recited in claims 7-8 and 11-12, except for specifying that

containment losses are divided into losses from theft, evaporation, seepage, and

leakage where losses from evaporation, seepage, and leakage are accounted for to

allow the theft losses to be determined by said computational means.

Mastandrea teaches that containment losses such as leakage can be more accurately determined by accounting for evaporation and subtracting the evaporation losses from the change in volume of at least one pool.

Neither Mastandrea nor Hsiung teaches dividing containment losses into theft and seepage. However, theft is described in the applicant's disclosure as a spike in the continuously monitored liquid level and seepage has been commonly known as a source of loss.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of loss detection of Hsiung by taking evaporation into consideration as a source of loss as taught by Mastandrea for an accurate determination of loss. Furthermore, to take both theft and seepage into consideration of all sources of losses when employing the method of the combination of Hsiung and Mastandrea to enhance the accuracy of loss would have been convincingly obvious to a person skilled in the art.

With respect to claims 10 and 14, the combination of Mastandrea and Hsiung obviously disclose all the claimed limitations as expressly recited in claims 9 and 13, except for the claimed formula.

The applicant, however, states in page 6, lines 19-29 "The evaporation loss 48 can be calculated using standard techniques for the evaporation of water from a free surface. An example of such a technique being given by the following formula:

$E_{vp} = 0.01 \times P_f \times E_{pp} \times SA$

Where:

E_{vp} = the volume (Megalitres) lost to evaporation from the pool water surface for a period 'p'.

P_{f} = pan factor (Class A)

E_{pp} = pan evaporation for period 'p' (millimeters)

SA = surface area of the pool "

Therefore, to employ the claimed formula in the method of detecting a loss of the combination of Hsiung and Mastandrea for an accuracy of loss detection would have been deemed obvious to one of ordinary skill in the art at the time of the invention.

7.   Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mastandrea (U.S. Patent No. 4,852,054).

With respect to claim 2, Mastandrea discloses a method of loss detection to determine containment losses due to leakage from at least one pool (column 22, lines 34), said method including the steps of measuring the change in volume of said at least one pool (column 22, lines 51-53), determining the evaporation losses and calculating the containment losses by subtracting the evaporation losses from the change in volume of said at least one pool (column 22, lines 49-51). Mastandrea, however, does not teach containment loss due to seepage.

Seepage, however, is just another type of loss that has been commonly known in the art for the determination of loss. Therefore, to employ the method of loss detection of Mastandrea to determine containment loss due to seepage would have been obvious to one of ordinary skill in the art.

With respect to claim 15, Mastandrea obviously discloses all the claimed

limitations as expressly recited in claim 2, except for the claimed formula.

The applicant, however, states in page 6, lines 19-29 "The evaporation loss 48

can be calculated using standard techniques for the evaporation of water from a free

surface. An example of such a technique being given by the following formula:

$E_{vp} = 0.01 \times P_f \times E_{pp} \times SA$

Where:

E_{vp} = the volume (Megalitres) lost to evaporation from the pool water surface for a

period 'p'.

$P_{f=}$ pan factor (Class A)

E_{pp} = pan evaporation for period 'p' (millimeters)

SA = surface area of the pool ".

Therefore, to employ the claimed formula in the method of detecting a loss of

Mastandrea for an accuracy of loss detection would have been convincingly obvious to

a person skilled in the art.

Citation of relevant prior art

8.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Folkers (US Patent No. 7,011.102) discloses a contained pipeline and leak

detection system with fluid reservoirs adjoined throughout.

Beldham et al. (US Patent No. 5,059,954) discloses a continuously monitored

liquid level system that triggers and alarm when the level drops below a certain

threshold.

Biard et al. (US Patent No. 4,751,841) discloses a leak rate detector that

determines the leak rate from an impoundment further considering evaporation.

Inquiry

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to ALEX DEVITO whose telephone number is (571)270-

7551. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm

Alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Thuy Tran can be reached on 571-272-1828. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DeVito, Alex/
10/24/08

/Thuy Vinh Tran/
Supervisory Patent Examiner, Art Unit 4176